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CardioLogic Title

Product Benefits

- **Cardio-Logic®** is an exclusive formula designed by Arnold Fox, M.D., "The Anti-Aging Doctor". Its unique combination of Aged Garlic Extract, L-carnitine, coenzyme Q₁₀ (CoQ₁₀), α-lipoic acid, vitamins E, B₆, B₁₂ and folate lowers elevated homocysteine levels and supports cardiovascular health*.
- Excessive serum cholesterol and homocysteine can damage the cardiovascular system. Recent studies have concluded that elevated homocysteine levels may be an independent risk factor for the development of heart disease. Homocysteine damages cells that line the veins or arteries and stimulates the development of scar tissue in the damaged area. It has also been shown to both activate clotting factors and to hamper their inactivation.
- Sufficient energy production is indispensable to maintain healthy heart function. Processes that regulate proper cardiac muscular function, such as nerve stimulation and actual beating of the heart, require a sufficient and continuous energy supply. To generate energy, cells burn the foods we eat for fuel. This sophisticated burning process is delicately regulated by several important factors including CoQ₁₀, α-lipoic acid, vitamin B₁₂ and L-carnitine, each of which is included in **Cardio-Logic**.
- It is well known that oxidants/free radicals contribute to the development of cardiovascular diseases. As long as antioxidants and free radicals are in balance, no serious problems arise. However, once free radicals overwhelm the internal or dietary antioxidant supply (due to poor eating habits, stress, sickness, injury, degenerative diseases, overexertion or other factors), free radicals begin to cause damage to cells and tissues (including the cardiovascular system) and can even disrupt their proper functioning. Supplemental antioxidants play a significant role in the body's defense against an excess level of free radicals and the damage they can cause.



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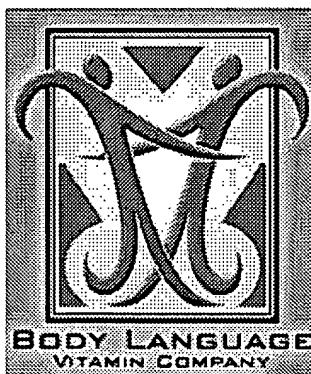
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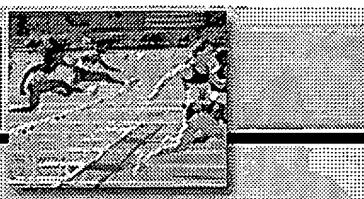
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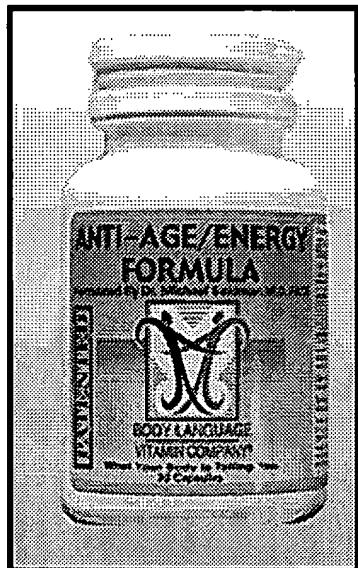
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Product Catalog



Anti-Age/Energy Formula



Directions: Take one Anti-age/Energy capsule daily with 8 oz. of water and with a meal (30 capsules per bottle -1 month supply). Note this patented formula is somewhat acidic and may cause heartburn in <5% of users. If you experience heartburn please drink one more full glass of water and the problem will resolve. If you are taking the Anti-age/Energy formula, the Antioxidant formula and the Multivitamin formula, (our recommendation) we suggest taking the supplements as follows: 1 MVI;1 Antioxidant;1 Anti-age in the AM and 2MVI and 1 Antioxidant in the PM If you cannot remember your evening dose, it is okay to take it all at once, however it is best if you can space out the dosing.

There is extensive scientific support that mitochondrial function declines with age, probably as early as our twenties. A leading theory on aging, the mitochondrial clock theory, is based upon a gradual decline in mitochondrial function because of DNA damage from Reactive Oxygen Metabolites (ROM) (also known as free radicals). With aging, energy production is reduced. This patented product combines two mitochondrial metabolites and two mitochondrial respiratory chain precursors that enhance mitochondrial function. In animal and human studies these metabolites increase mitochondrial function, enhance energy production and may counteract some of the biochemical reactions associated

with aging.

More Information:

Alpha lipoic acid: (150 mg)

Alpha lipoic acid (ALA) is a coenzyme necessary for normal mitochondrial function and energy production. This vitamin-like substance has been supplemented orally for health benefits and has also been used as a therapeutic agent in a variety of liver and brain disorders, as well as mushroom poisoning. Consideration has also been given to the use of ALA in the treatment of diabetes and recent studies in our laboratory have demonstrated improvement in age related hearing loss (Seidman et al in press). We have also shown its ability to enhance mitochondrial function (safely), which allows for increased energy production.

Dietary supplementation of ALA successfully prevents heart damage induced by reduced blood supply as is seen in heart attacks. Presently its primary therapeutic use is for the treatment of diabetic induced nerve dysfunction (neuropathy). The reduced form of **alpha-lipoic acid** is dihydrolipoic **acid** (DHLA). DHLA prevents lipid peroxidation which is the end stage of free radical damage. It does this by reducing glutathione which in turn recycles vitamin E. DHLA has also been demonstrated to be a reactive oxygen metabolite scavenger (an antioxidant), to reduce peroxy, ascorbyl and chromanoxyl radicals and to inhibit singlet oxygen (these are all beneficial effects).

Acetyl L-carnitine: (150 mg)

Acetyl L-carnitine (ALCAR) is a biological compound which plays a key role in the transport of fatty acids from inside the cell to the mitochondria for *J*-oxidation. This is a crucial step for energy production. ALCAR controls the metabolism of sugars, lipids and amino acids, thus playing a pivotal role in cellular energy and turn over of cell membranes and proteins. A positive effect on survival was observed in rats treated with ALCAR (Markowska et al 1990). The mechanisms of this effect are currently unknown, but they are very similar to the survival observed in rats fed a

restricted caloric diet. Chronic treatment with ALCAR enhances stimulation of antioxidant defenses. It also enhances the age-related effect of glucocorticoid secretion, and improves learning and memory possibly due to its ability to increase the release of acetylcholine. Pretreatment of old rats with ALCAR was able to bring back the levels of mitochondrial transcripts to adult levels in a time and dose-dependent fashion. Furthermore, studies in our laboratory have shown improved hearing in aged subjects compared to controls. Additionally, the treated subjects had improved mitochondrial function, energy production and there was evidence for a reduction in mitochondrial damage (Seidman et al in press).

ALCAR has been shown to be capable of restoring the integrity of the cardiac mitochondrial membrane altered by aging (specifically the cardiolipin content), thereby restoring the normal activity of cytochrome oxidase, adenine nucleotide translocase, and phosphate carrier. This allowed more efficient energy production and results in improved cardiac performance in the aged.

Coenzyme Q-10: (60 mg)

Coenzyme Q-10 (**CoQ**-10) is crucial for mitochondrial function and is essential in the generation of energy. It was first recognized in 1957 as a component necessary for oxidative phosphorylation (the process by which the mitochondria makes energy). Reduced **CoQ**-10 functions as an antioxidant and can therefore combat the production of free oxygen radicals. Additionally it appears to function by preventing the initiation and propagation of lipid peroxidation (the end stage of free radical damage). There is evidence supporting an age-related decline of **CoQ**-10 in humans and other species, thus further supporting the membrane hypothesis of aging. **CoQ**-10 is currently used alone or in combination as a health/nutritional supplement. It has shown promise in enhancing heart function and has been used medicinally in European countries for this purpose. It us in this regard is gaining momentum in the USA. It may also be useful in cognitive and other neurologic disorders (i.e. Alzheimer's disease and diseases that produce muscle weakness such as certain muscular dystrophies).

Glutathione: (30 mg)

Glutathione (L-K-glutamyl-L-cysteinyl-glycine; GSH) detoxifies reactive oxygen species (it acts as an antioxidant). It is also involved in the metabolism and detoxification of certain drugs. Mitochondrial glutathione is critical to cell viability and the glutathione redox cycle is a primary antioxidant defense system within the mitochondrial. Additional functions include intracellular binding, transport of lipophilic substances and prostaglandin synthesis.

Many studies have demonstrated that alterations of glutathione levels through excess or reduced production have a beneficial or harmful influence on cellular function, respectively. Specifically, it has been shown that glutathione reduces gentamicin induced cochlear damage and that gentamicin ototoxicity may be attenuated using glutathione. It has also been shown that the mechanism for toxicity of certain clinically used drugs occurs secondary to reduced glutathione levels with an increase in reactive oxygen species. Recent studies have demonstrated an age-associated 86% reduction in glutathione levels in the auditory nerve. Thus, it can be hypothesized that hearing loss may occur in part because of reduction in glutathione levels with age.

Studies of patients with Alzheimer's disease have demonstrated age-dependent decreases of glutathione-peroxidase activities and their cofactors.

These supplements are made with the finest natural ingredients. Several of the ingredients can not be obtained from natural sources and then only the highest quality manufactured ingredients are used. An example is **acetyl-L-carnitine** which can be found in small quantities in broccoli, but approximately 15 pounds would have to be ingested to obtain the amounts provided in our patented Anti-age/Energy Formula.

None of our supplements contain any yeast, sugars, preservatives, artificial coloring, artificial flavoring, wheat, corn, or milk.

The supplements are made in a FDA inspected laboratory that meets all requirements of safety and sterility.

These supplements meet or exceed all USP specifications.

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[Phytonutrient Formula](#)

[Cold and Flu Formula](#)

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